1949 OUTLOOK ISSUE
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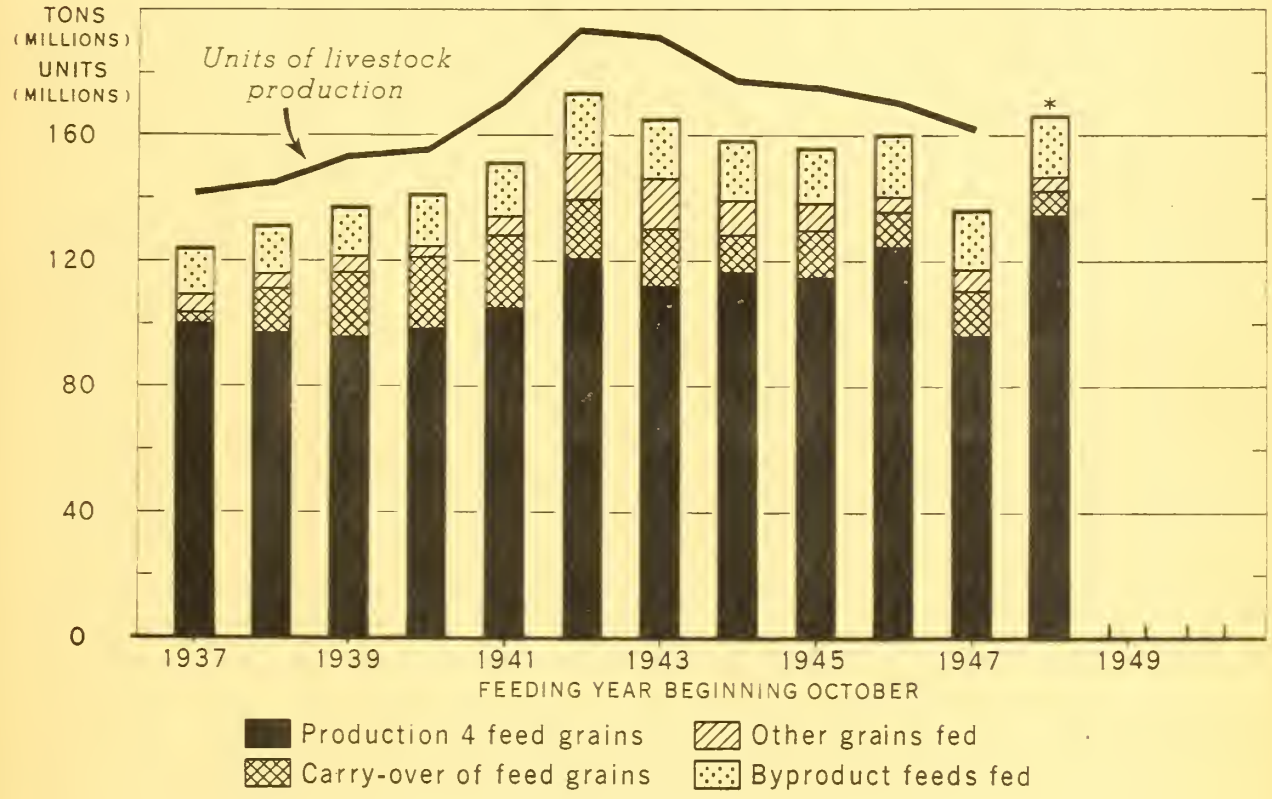
THE Livestock and Meat SITUATION

BUREAU OF AGRICULTURAL ECONOMICS
UNITED STATES DEPARTMENT OF AGRICULTURE

LMS-19 BAE SEPTEMBER 1948

SUPPLY OF ALL CONCENTRATES AND VOLUME OF ALL LIVESTOCK PRODUCTS PRODUCED, FEEDING YEARS 1937-48



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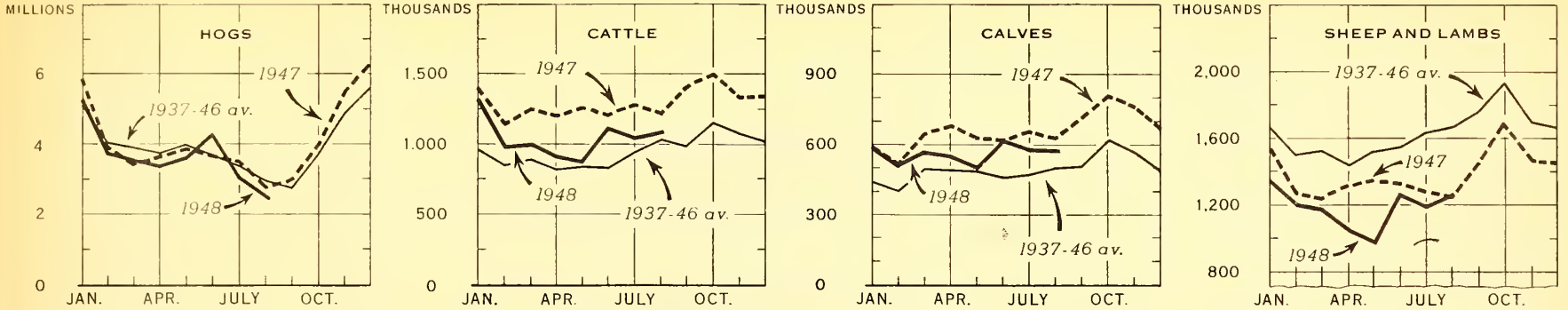
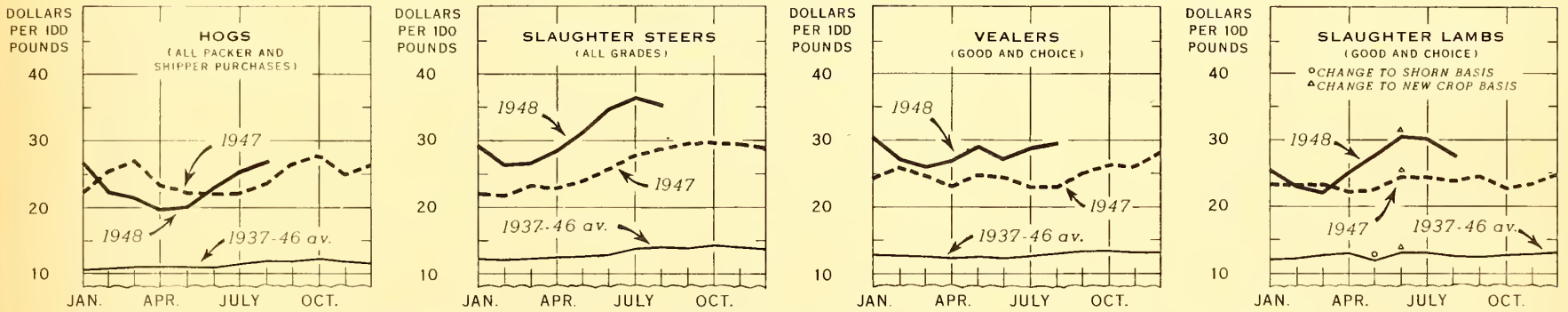
Output of all livestock products combined has followed feed concentrate supplies in a declining trend beginning 5 years ago. For the first time since 1943, the supply of concentrates in the feeding year beginning October 1948 will exceed 160 million tons. This is ample to encourage a recovery in livestock production, but because of small carry-over stocks that need rebuilding and reduced breeding herds that limit output, a full response in 1948-49 livestock production cannot be expected.

LIVESTOCK AND MEAT SITUATION

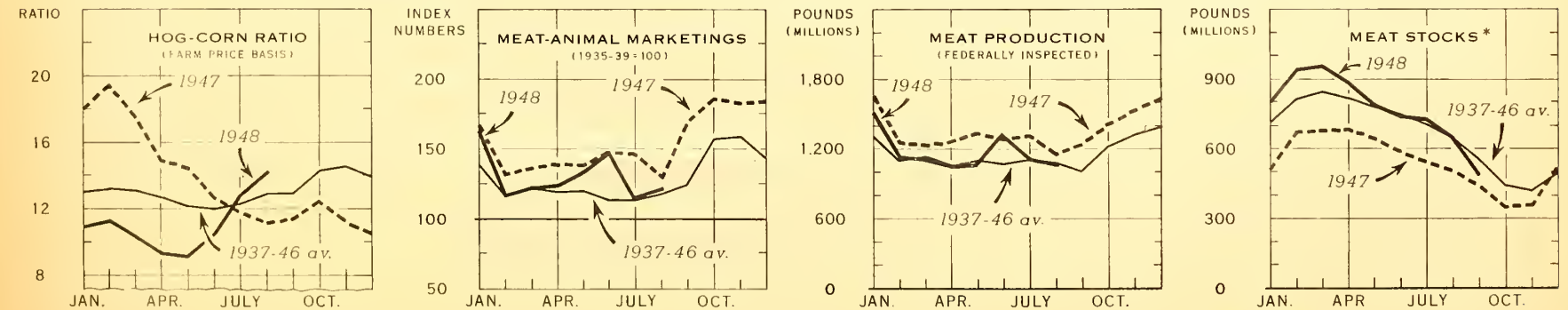
FEDERALLY INSPECTED SLAUGHTER, UNITED STATES



MARKET PRICES, CHICAGO



HOG-CORN RATIO, MEAT ANIMAL MARKETINGS, MEAT PRODUCTION, AND STOCKS, UNITED STATES



* BEEF, LAMB AND MUTTON, PORK, AND MISCELLANEOUS MEATS IN MEAT PACKING PLANTS AND COMMERCIAL COLD STORAGE HOUSES, BEGINNING OF MONTH

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THE LIVESTOCK AND MEAT SITUATION

Approved by the Outlook and Situation Board, September 23, 1948

SUMMARY

About 140 to 145 pounds of meat per civilian consumer are indicated for next year, compared with an estimated 148 pounds in 1948, 155 pounds in 1947 and an average of 134 pounds in 1937-41. Although 1949 probably will not be a year of much greater meat output, it could be the turning point in the current downtrend. This is especially likely if corn and other feed crops are large next fall. Such an outlook would be in contrast with 1948, when the nation's inventory of meat animals shrank for the fifth consecutive year.

Compared with 1948, more of the 1949 meat supply will be pork and less will be beef. However, more of the cattle will be grain-fed and a larger part of the beef will be of the better grades. Seasonal shortages in meat supplies may not be as acute next year as in 1948, and the late fall months will bring more abundant supplies as hogs raised from the expected large spring pig crop move to market.

Since total meat output will be little different next year, changes in prices of meats and meat animals will be due mainly to changes in demand. A continued strong consumer demand would hold prices close to their 1948 level. However, the retail value of meat in 1948 has been exceptionally high in relation to incomes. If consumers' expenditures in relation to incomes in 1949 should be more like those in prewar years, meat and meat animal prices could weaken moderately, but even in this event they would still be high by all past standards--above any year except 1948.

Pork production will expand next year about in proportion to the increase in size of pig crops. The crop of this fall, which will be marketed next spring and summer, may be somewhat larger than the fall pig crop of 1947. The crop next spring, by reason of abundant corn supplies and a hog-corn ratio this fall that may be near-record high, is expected to increase 15 to 20 percent above the 1948 spring crop. A gain of 17 percent would fulfill the goal of 60 million spring pigs announced by the Department of Agriculture. This goal exceeds the size of any pig crop since 1943.

The year 1948 is the fourth in a row when more cattle and calves were marketed than were added to herds through births, less deaths, and through imports. This has made for larger current beef supplies at the expense of future production. The reduction in cattle numbers has been greatest in steers and heifers and in young stock. Cows other than dairy cows have not been reduced very much.

Cattlemen may start holding back cattle in 1949 to rebuild herds, although possibly not enough to stop the decline in numbers completely. In this event, cattle slaughter would be reduced substantially and calf slaughter even more. Beef and veal output would likewise be reduced, although expanded grain feeding is expected to provide more top quality beef.

The decline in sheep numbers that began in 1942 is continuing. The 1948 lamb crop was down from last year by 8 percent. Many ewes are again being marketed this year. Wool prices in mid-1948 showed their greatest strength since 1946, and may average well above supports in 1949 because of strong demand and premium prices for the finer qualities. Nevertheless, no end to the downtrend in sheep numbers is yet indicated.

The greatest single factor underlying the meat outlook is the bumper feed grain harvest of 1948. The biggest corn crop in history is the base for record feed grain supplies and for a total supply of feed concentrates which, although short of 1942 in tonnage, is the largest ever in terms of livestock numbers.

OUTLOOK FOR MEAT IN 1949

Meat Supplies in 1949 Likely to be about Equal to 1948

The outlook for 1949 is that slightly more meat may be produced than in 1948. Since the population is growing, average consumption per civilian consumer can hardly exceed 1948, and may be slightly smaller.

More of the meat next year will be pork. Supplies of beef and lamb will be smaller, but because a larger part of the cattle will be grain-fed, more of the beef will be of the better grades. Seasonal fluctuations in meat supply may be more nearly normal, and temporary shortages may not be as acute as they were in 1948. Relatively more meat will be available in the last half of next year than of 1948 as the late months will bring a strong movement of hogs to market and of pork into consumption.

Between 140 and 145 pounds of meat per civilian consumer will be available in 1949. Consumption in 1948 is estimated at 145 pounds per person. Consumption next year depends mainly on the quantity of production. Some increase in military takings may be expected, and a replenishment or increase in cold storage stocks of meat may occur by the end of 1949. In 1948, fairly low year-end stocks are expected, and a small net outmovement from storage will add to the year's meat consumption.

In 1949 as in 1948, meat consumption per person will be larger than it was before the war. The average consumption in 1937-41 was 134 pounds. However, consumption per civilian consumer reached an average level of 147 pounds in 1942 to 1946, and consumption of 155 pounds in 1947 was the highest in nearly 40 years (see table 1). Meat supplies for consumers have not increased in the last few years as rapidly as employment and incomes.

The outlook for meat supplies and consumption in 1949 is based on prospects that the big feed supplies this fall will step up pork production enough to make up for another decrease in production of beef and veal and of lamb and mutton. The outlook is based, too, on prospects for continued national prosperity and strong demand for meat; also it assumes continuation of peacetime conditions, with only a small increase in United States military forces.

Although 1949 probably will not be a year of substantially greater meat output, it could be the turning point in the current downtrend. Livestock producers have been beset by several years of gradually shrinking feed supplies. Bountiful feed crops in 1948 have changed this picture. In 1949, hog production will swing upward and cattle herds may be more nearly maintained through the holding back of more young stock for breeding purposes.

Table 1. - Total meat production by kinds and civilian consumption per person, United States, average 1937-41, annual 1942-49

Year	Total production 1/					Civilian consumption	
	Beef	Veal	Lamb and mutton	Pork excl. lard	Total	Total	Per capita
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Pounds
Average 1937-41	7,196	1,022	884	8,573	17,675	17,601	133.8
1942	8,843	1,151	1,042	10,876	21,912	18,451	139.5
1943	8,571	1,167	1,104	13,640	24,482	18,921	146.0
1944	9,112	1,738	1,024	13,304	25,178	19,827	153.5
1945	10,275	1,661	1,054	10,697	23,687	18,738	144.4
1946	9,373	1,440	970	11,173	22,956	21,367	153.4
1947	10,429	1,599	802	10,605	23,435	22,247	155.0
1948 2/	9,263	1,488	738	9,827	21,316	21,232	145.2
1949 3/	9,000	1,400	700	10,600	21,700	21,100	4/140-145

1/ Dressed meat produced from slaughter. Excludes production of meat in Hawaii and Virgin Islands.
2/ Partly forecast.
3/ Forecast.
4/ Consumption of 21,100 million pounds is equivalent to 143 pounds per capita. The range of 140-145 pounds allows for errors in estimates of both production and non-civilian uses.

Production of pork, excluding lard, in 1949 may be about 10.6 billion pounds an increase of 8 percent from 1948. About as much pork will be produced in the winter and early spring as was produced at that time this year. Pork production in the summer may exceed that in the summer of 1948. In the last quarter of 1949, pork production will be larger than a year earlier by the increase in next year's spring pig crop over the 1948 spring crop. In view of the present ratios between hog and corn prices, the increase over 1948 in the number of spring pigs and in last quarter pork supplies could be substantial--15 percent or more.

Beef and veal production in 1947 was 12 billion pounds, and in 1948 it is expected to total about 10.8 billions. A further decrease next year seems almost certain. In the last several years a part of beef output has come from slaughter of more cattle than were produced during the year. The reduction in numbers has provided current meat supplies at the expense of supplies in future years. Beef production in 1949 would normally be expected to decline moderately because of fewer numbers in the national cattle herd. And if cattlemen should hold back enough young stock to replace older animals and maintain herd numbers in 1949, beef production would decline more. Although every tendency to maintain breeding herds in 1949 would reduce meat supplies at the time, it would give a promise of more beef for consumption a few years ahead.

This year's good feed crops cannot increase numbers of cattle slaughtered next year. Some increase in grain feeding may be expected, although numbers to go on feed will be limited by the number of feeder stock available. Because more of the cattle will be grain fed, more of the beef will be of the higher grades. Normally, top grade beef is more plentiful in spring and summer, and this seasonal distribution is likely to prevail in 1949. However, grain-fed beef is likely to be more plentiful in the fall of 1949 than in the fall of 1948.

Cattle slaughter probably will be reduced below 1948. The reduction will be more than can be made up by any increase in average weights. Fewer calves also will be slaughtered next year, both because fewer will be born and because more may be held for raising or feeding. This will bring veal production down from this year. Present estimates are that beef and veal production in 1949 may not exceed 10.4 billion pounds.

Sheep numbers have declined rapidly since 1942. Continuing that downtrend, it is expected that less lamb and mutton will be produced in 1949 than in 1948. Heavy marketings of ewes this year indicate a further cut in ewes in flocks next January 1, and therefore a prospective lamb crop next year smaller than in 1948. A larger percentage of lambs may be grain fed this fall than last, but total numbers on grain feed this coming January 1 probably will not equal the 4.8 million at the beginning of 1948 and will be less than those of any other January since at least 1928. The lamb crop in the Western States, from which most feeder lambs are supplied, was down 9 percent in 1948 from a year earlier. Lamb and mutton production in 1949 is estimated at less than 700 million pounds.

Table 2.-Retail prices of meats and farm prices of meat animals, average 1937-41, annual 1942-48

Year	Retail price of meat per pound 1/	Prices received by farmers for meat animals: Beef cattle per 100 pounds	Calves per 100 pounds	Sheep per 100 pounds	Lambs per 100 pounds	Hogs per 100 pounds	All classes, index number (1910-14=100)
	Cents	Dollars	Dollars	Dollars	Dollars	Dollars	
1937-41	25.7	7.41	8.71	4.20	8.28	7.59	123
1942	31.4	10.70	12.30	5.80	11.70	13.00	188
1943	31.9	11.90	13.30	6.57	13.00	13.70	209
1944	30.2	10.80	12.40	6.01	12.50	13.10	200
1945	30.2	12.10	13.10	6.38	13.10	14.00	210
1946	38.4	14.50	15.30	7.48	15.60	17.50	256
1947	56.2	18.50	20.40	8.45	20.50	24.10	340
1948 2/	67.0	23.20	25.00	9.80	22.80	24.00	380

1/ Weighted average of retail prices for all important cuts. 2/ Partly forecast.

Table 3. - Retail value of meat consumption per person compared with disposable personal income and consumer expenditures per person, 1937-41, 1947-48

Year 1/	Average retail price of meat per pound 2/	Retail value of meat consumed per person	Disposable personal income per person	Consumer expenditures per person	Retail value of meat as percent of: Disposable personal income	Retail value of meat as percent of: Consumer expenditures
	Cents	Dollars	Dollars	Dollars	Percent	Percent
1937	28.9	31.3	552	521	5.7	6.0
1938	25.5	27.9	505	497	5.5	5.6
1939	24.6	28.4	536	516	5.3	5.5
1940	22.9	28.4	573	546	5.0	5.2
1941	26.8	33.3	691	618	4.8	5.4
1947	56.2	75.4	1,206	1,144	6.3	6.6
1948 3/	67.0	83.7	1,290	1,210	6.5	6.9

1/ War years omitted because price control and other circumstances prevented normal relationships between prices and incomes. 2/ Weighted average of retail prices for all important cuts. 3/ Partly forecast.

Meat Prices Likely Again to be High in 1949

So long as the general price level, employment, industrial activity and consumer incomes remain high, prices of meats and meat animals are likely to continue to exceed by far their prewar and wartime levels. Over the last several years, meat prices have advanced along with general commodity prices and with consumer incomes. Since meat production in 1949 is not likely to be much different from that in 1948, meat prices will change mainly in response to changing general prices and incomes.

Total retail value of meat has held a more fixed ratio to consumer incomes than have average meat prices. Since the end of price control in 1946, retail value of meat has amounted to about 6 percent of disposable personal incomes and close to 7 percent of consumer expenditures for all goods and services. These percentages were higher than the ratios just before the war, and about equal to those 30 years earlier. In 1948, when consumers' incomes continued to rise, retail value of meat consumption increased. Since supplies were smaller, average meat prices climbed sharply.

If consumers' expenditures in relation to income should return more nearly to prewar patterns as a result of more plentiful supplies and cheaper prices for some foods or for other causes, both the retail value of meat consumption and average retail price of meat could decline as much as 10 percent. But even after such an adjustment, meat prices in 1949 would be higher than in any year except 1948.

The prospects for 1949 indicated above apply to year-average prices for all meats. Seasonal movements in prices may be nearly normal next year, as contrasted with unusual and sometimes erratic price fluctuations in 1948. In particular, the outlook is for a smaller summer spurt in prices next year. Also, prices may decline more than usual in the late fall, since marketings of spring pigs in the later months of the year will provide an especially large seasonal increase in meat supplies.

Beef and beef cattle prices are likely to average comparatively higher than pork and hog prices, since less beef and more pork will be produced.

Exports and Military
Requirements to be Small

During the war, a large part of meat production went into military uses and exports, including lend-lease. In 1943-45, those uses required more than 20 percent of production. In 1948, however, less meat has been exported commercially and shipped to United States territories than has been imported, and military requirements probably will not reach 500 million pounds. In 1949, imports of meat are likely again to exceed the small exports and shipments. Military requirements for United States meat may rise moderately in 1949, but still may be around one-half billion pounds. The Economic Cooperation Administration has programmed no foreign shipment of United States meat other than horsemeat, and shipments for military feeding of civilians in foreign occupied zones, which are included in total military takings, will be negligible.

FEED SUPPLIES FOR 1948-49

Biggest Feed Grain Harvest on Record;
Total Feeds for Next Year Near a Record

An all-time record feed grain supply is now indicated for 1948. This is the biggest story in the livestock outlook for next year and the most important present factor to affect meat animal production between now and the middle of 1950. The corn harvest will be the largest ever known. Corn acreage is no larger than recent averages, but the indicated yield per acre of 41.3 bushels is 4.6 more than the previous high. Production of corn, oats, barley and grain sorghums will total approximately 134 million tons. The 1947 crop was 96 million tons and the 1946 crop of 124 million was the largest until this year.

These feed grain crops come at a time when carry-overs of old grains are extremely low. Nevertheless, the total supply of feed grains--production plus stocks--will also be the largest on record.

Other feeds will be abundant in the 1948-49 feeding year but not to the same degree as feed grains. Wheat feeding will be down from 1947-48 and far below the quantities fed in 1942 and 1943, because domestic and foreign use as food will utilize most of the big wheat crop. Production of byproduct feeds will hold at about recent levels.

When estimated tonnages of wheat, rye, and byproduct feeds to be fed in 1948-49 are added to the supply of feed grains, the supply of all feed concentrates stands second to the peak supply in 1942-43 but is 22 percent larger than last year and 4 percent above 1946-47.

Feed concentrate supplies per unit of livestock are larger than ever before, as livestock numbers have been reduced over several years. They amount to 1.05 ton per animal unit to be fed, compared with the record 0.99 in 1946-47.

These abundant feed supplies relative to livestock numbers will encourage an expansion of total production of livestock and livestock products, and especially of hogs, in 1948-49. Livestock-feed price ratios will be much more favorable to producers in months ahead than they were last winter and spring. They have already improved materially; the hog-corn ratio (U. S. farm basis) rose from 9.1 in May to 14.2 in August.

The extra large feed supply will result in higher rates of feeding and a higher production per animal. Average slaughter weights of hogs are likely to be very heavy.

Table 4.-Feed balance sheet and units of livestock production, feeding year beginning October 1937-48

Items	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947 1/	1948 2/
	Mil. tons	Mil. tons	Mil. tons	Mil. tons	Mil. tons	Mil. tons	Mil. tons	Mil. tons	Mil. tons	Mil. tons	Mil. tons	Mil. tons
Supply												
Production	100.1	96.8	95.8	98.6	105.0	120.8	112.1	116.7	114.4	124.3	96.1	134.0
Stocks beg. of crop year 3/	3.8	14.2	20.7	22.8	23.1	18.5	17.8	11.6	14.9	10.9	13.7	8.0
Wheat and rye fed	5.0	4.7	4.8	2.7	5.6	12.0	9.4	8.3	8.1	4.7	6.6	4.5
Other grains fed 4/	.1	.1	.3	.3	.3	2.9	6.4	2.4	0.2	0.1	0.1	---
Byproduct feeds for feed	14.2	14.8	14.9	16.3	16.7	18.6	18.8	10.0	17.7	19.5	19.0	19.0
Total supply	123.2	130.6	136.5	140.7	150.7	172.8	164.5	158.0	155.3	159.5	135.5	165.5
Utilization												
Total concentrates fed	97.0	99.6	102.9	108.6	119.0	142.5	139.0	129.1	133.5	124.6	115.7	124.5
Other uses	13.6	10.4	10.8	10.9	13.3	13.1	12.6	15.0	13.2	19.4	13.5	18.5
Total utilization	110.6	110.0	113.7	119.5	132.3	155.6	151.6	144.1	146.7	144.0	129.2	143.0
Total utilization adjusted to crop year basis	109.0	109.9	113.7	117.6	132.3	155.0	152.9	143.1	144.4	145.8	127.4	143.9
Stocks at end of crop year	14.2	20.7	22.8	23.1	18.5	17.8	11.6	14.9	10.9	13.7	8.0	21.6
Units of livestock production	141.5	144.9	153.4	155.2	170.0	193.6	191.3	176.4	174.6	169.6	162.5	166.0

1/ Partly estimated.
2/ Partly forecast.
3/ Stocks in all positions of corn October 1, and oats and barley July 1.
4/ Imported grain fed.

The corn crop has surpassed crib space for its storage and is beyond the experience and plans of farmers for its use. If they have cribs that will meet specifications farmers can store corn under Government loan. Corn loans at 90 percent of parity are established by the Steagall Amendment and by the Agricultural Adjustment Act of 1948. The season-average loan rate to farmers is expected to be about $1.45 per bushel, United States average. Storage under loan will provide (1) a return from the grain at least equal to the loan rates; (2) short-term financing in case farmers later decide to feed the corn; (3) longer financing for holding the stocks through another year if resealing privileges are granted next fall. Purchase agreements offered by the Commodity Credit Corporation also assure farmers of a market at loan rates but do not include financing.

In localities where storage facilities and current demand at support prices are not equal to supplies available for sale, corn probably will sell below loan rates. This has already occurred in some places for grain sorghums, oats and barley.

If commercial demand plus farmers' own feeding should be far too small to utilize the supply of feed grains, large quantities will be carried over under Government loan at the end of the 1948-49 marketing year. Also, at least an average carry-over, and probably more, will be held outside of loan. Production of livestock, particularly of hogs, will not increase as much next year if large quantities of feed grains are held through the entire year in Government and private storage as if more nearly average carry-overs were retained.

OUTLOOK FOR HOGS IN 1948

Slight Reduction in Hog Slaughter in First Half of 1949; Increase in Last Half

Annual pig crops and hog slaughter were reduced rapidly after reserve feed supplies were fed up in 1943, then leveled off to around 85 million pigs saved and 72-75 million hogs slaughtered annually. The pig crop of 51.4 millions in the spring of 1948 was only 3 percent smaller than the crop a year earlier, despite limited corn supplies and an unfavorable hog-corn price ratio.

Farmers reported on June 1 this year that they intended to breed about the same number of sows for fall farrowing as a year earlier. Since that time, the hog-corn ratio has become progressively more favorable to hog producers. Early in the summer, sow marketings equaled those a year before, but later in the season the marketings became fewer relative to last year. In its fall pig goal, the Department of Agriculture recommended that farmers breed at least 10 percent more sows for fall farrowing this year than a year ago. A small increase over a year ago in the size of the 1948 fall pig crop may possibly take place. If it occurs, it will add to pork supplies in 1949.

If hog prices hold up to their recent United States average farm price level of more than $25.00 per 100 pounds, while corn prices drop to or below the loan rate of approximately $1.45 per bushel, the hog-corn ratio this fall will reach 17.0 or more. In this event, 1948 would be classed along with other years of the highest fall ratio--1946, 1942, 1938, 1937, and several earlier years. The feeding margin for a slaughter hog this winter will be nearly as high as in any past year in percentage terms, and much higher than ever before in dollars.

Table 5.- Pig crops and hog slaughter, average 1937-41, annual 1942-48, and pig crop goals for fall of 1948 and spring of 1949

Year	Pig Crop			Hog slaughter 1/
	Spring	Fall	Total	
	Thousands	Thousands	Thousands	Thousands
1937-41	46,801	30,428	77,229	65,642
1942	61,093	43,810	104,903	78,547
1943	74,223	47,584	121,807	95,226
1944	55,754	30,905	86,659	98,066
1945	52,189	34,593	86,782	71,801
1946	52,392	30,548	82,940	76,244
1947	52,802	31,352	84,154	74,733
1948	51,421	(2/ 31,000	82,421	4/ 69,500
		(3/ 34,400	85,821	
1949	3/ 60,000			

1/ Total, including farm slaughter.
2/ Based on farmers' intentions as reported June 1.
3/ Goal announced by USDA.
4/ Partly forecast.

The increase in spring pigs in 1949 will be substantial. In 4 years a high hog-corn ratio in the fall was followed by an increase of 24 to 28 percent. However, some of the largest percentage increases in earlier years started from a lower scale of hog numbers than that of 1948. Farmers are guaranteed a corn loan at about $1.45 per bushel, a price that on many farms will pay all costs of production including labor costs. Therefore, some farmers may prefer the certainty of a moderate return from their corn to the extra work and extra price hazard they assume when they raise and feed hogs. Moreover, at the time gilts normally would be bred for spring farrow, their value as slaughter animals will be unusually high. The lucrative price may claim for slaughter some animals that under lower price conditions would be held for breeding.

On the other hand, livestock feeders will find comparatively limited opportunities for expanded feeding operations except by raising more hogs. Farmers in the "corn-hog" business traditionally plan to use their corn if they can. The supply of feeder cattle and lambs will be restricted not only this year but also next, because of declining national herd numbers. At the time late in the fattening period when hog producers will have to decide finally whether to breed or to market their gilts, the hog-corn price ratio will have completed a fast advance to levels about as high as ever witnessed. Furthermore, recent experience has been that farmers have raised more rather than fewer pigs than would be expected from relationships between feed supplies and hog prices. The spring crop of 1948 was nearly the maximum that feed stocks would permit.

From a corn supply this October larger than last October by 970 million bushels or 36 percent, an increase of from 15 to 20 percent in the number of spring pigs saved seems probable.

Fewer hogs will be slaughtered during the winter of 1948-49 than a year earlier. The spring pig crop of 1948, which provides most of the winter pork supply, was 3 percent smaller than that of 1947. Also, nearly 2 million more sows and gilts may be held back for breeding, further reducing the number of hogs for slaughter. However, heavier slaughter weights will make up a part of the reduction in pork supply caused by the fewer animals slaughtered. Weights are expected to average somewhat heavier than in the winter of 1947-48 and may set a new winter season record.

The reduction in pork supply compared with a year earlier will come mainly in the late months of 1948, because prospects are that more hogs than usual will be held for feeding on the new corn crop and this for late marketing. Also, a longer feeding period will be required for heavier market weights and will delay the time of marketing. From January to April 1949, pork supplies may be as large as they were in the same months of 1948.

Barrows and gilts slaughtered in the spring and summer of 1949 will come chiefly from the 1948 fall pig crop. If that crop is larger than the 1947 fall crop, it will produce more pork next spring and summer than was available in those months of 1948 from the 1947 fall crop. Another source of more pork at that time will be an expected increase in the number of sows slaughtered. The additional sows will come mainly from areas where only one litter of pigs is normally raised each year and many sows are sold after they farrow. Pork supplies are not expected to drop as much in the summer of 1949 as is that of 1948.

When the fall run of hogs to slaughter begins late in 1949, it will increase pork supplies seasonally to a level substantially higher than in the same period of 1948. The percentage change from late 1948 supply will be approximately the same as the percentage increase in spring pigs saved.

Support of hog prices at 90 percent of parity--which provides a minimum price for support activity in case it becomes necessary--is required through 1949 by existing legislation. In recent years, season average support prices have been announced twice each year. Prices are computed from the index of prices paid by farmers, including interest and taxes, just prior to the time of announcement, and are converted into a schedule of support prices week by week, which vary according to normal seasonal trends. Monthly average supports for 1948 are given in table 6. Support prices in 1949 will differ from 1948 approximately in proportion to changes in the index of prices paid, interest and taxes. Through March they would be set on the basis of the index of September 1948; from April to September, from the index of next March; and beginning in October 1949, from the index of September 1949. In August, 1948 the index was 251 (1910-14 = 100).

As is indicated in table 6, prices received for hogs have consistently exceeded support prices in 1948. They are likely to continue higher than supports in 1949. Prices received by farmers for hogs in the first half of 1949 are expected to be as high as a year earlier, but may not hold to 1948 levels through the second half and may decline more than usual during the large marketings late in the year. But if consumer incomes and demand for meat remain strong, increased pork supplies probably will bring no more than a moderate weakening in hog prices at any time, since supplies of other kinds of meat are likely to be smaller next year than this. At their lowest, hog prices next year probably will be much higher than prewar and wartime prices, and retain a ratio with corn prices favorable to hog producers.

Table 6.- Monthly average Department of Agriculture support prices for hogs, and actual prices, to date in 1948

Month	Support price, Chicago basis, for good and Choice barrow and gilt butcher hogs for Federally Inspected slaughter 1/			Market price of barrows and gilts at Chicago
	Index of prices paid, interest and taxes from which support was calculated		Support price 2/	
	Month	Index (1910-14 = 100)		
			Dollars per 100 pounds	
January	September 1947	238	15.31	27.06
February			15.89	22.48
March			16.45	21.64
April	March 1948	247	16.87	19.98
May			16.50	20.32
June			16.78	23.62
July			17.76	27.97
August			18.22	29.56
September			18.50	3/ 28.38

1/ Calculated from weekly support prices as announced.
2/ Support price for each month represents a seasonal adjustment to level of support. Prices for January to March were equivalent to an annual average of $16.15; those from April to September to an annual average of $16.84.
3/ Average for first 3 weeks.

OUTLOOK FOR BEEF CATTLE IN 1949

Fewer cattle and calves will be slaughtered in 1949 than in 1948 and less beef and veal will be produced. This is the present prospect. It is based on the current decline in cattle numbers and on an outlook for a smaller reduction in herds next year than is occurring in 1948.

Cattle numbers on farms and ranches have been going down since 1945. The 78.6 million head on January 1, 1948 were 8 percent fewer than the peak number of 85.6 million on the same date of 1945. From the standpoint of annual herd numbers, milk animals have declined faster than non-milk animals, and steers and heifers faster than beef cows. This means that the dairy side of the cattle industry has contributed more to the decline than has the beef side. It means too that animals fed or held to be fed for slaughter have been reduced more than has the breeding herd. Beef cows have been especially well maintained relative to other classes of cattle.

Each year beginning in 1945, producers have marketed more of their cattle than they replaced with young stock. The nearly 5 million cattle (excluding calves) sold out of herds from 1945-47 was equivalent to 7.6 percent of total cattle slaughter during those years. The number of cattle slaughtered would have been still larger in the last two or three years if more calves had been kept and sold as older animals and fewer slaughtered as calves. Calf slaughter has been an exceptionally large proportion of the calf crop--too large for either maintenance of cattle herds or for maximum output of beef.

Table 7. - Cattle and calf numbers, calf crop, and cattle and calf slaughter, average 1937-41, annual 1942-48

Year	Cattle and calves on farms, January 1: Total	Cattle (excluding calves): Total	Cows: Milk	Cows: Non-milk	Changes during year in number of cattle on farms (excluding calves)	Calves saved	Annual slaughter: Cattle	Annual slaughter: Calves	Change in cattle numbers (excluding calves) as a percentage of cattle slaughtered	Calf slaughter as percentage of calves saved
	Thousand	Thousand	Thousand	Thousand	Thousand	Thousand	Thousand	Thousand	Percent	Percent
Average 1937-41	67,488	51,028	24,822	10,569	≠ 1,355	29,291	15,215	9,428	≠ 8.9	32.2
1942	76,025	57,171	26,313	12,578	≠ 3,759	34,388	18,033	9,718	≠ 20.8	28.3
1943	81,204	60,930	27,138	13,980	≠ 3,435	34,797	17,845	9,940	≠ 19.3	28.6
1944	85,334	64,365	27,704	15,521	≠ 1,565	37,040	19,844	14,242	≠ 7.9	38.5
1945	85,573	65,930	27,770	16,456	- 2,656	35,176	21,691	13,645	- 12.2	38.8
1946	82,434	63,274	26,695	16,319	- 1,430	34,550	19,824	12,168	- 7.2	35.2
1947	81,207	61,844	26,098	16,469	- 781	35,319	22,393	13,695	- 3.5	38.8
1948 1/	78,564	60,063	25,165	16,047	---		19,750	13,000	---	---

1/ Slaughter partly forecast.

The decline in cattle numbers has taken place for several reasons; (1) a downturn was likely following a large expansion in 1939-45 relative to grain, roughage and range resources; (2) partly because of the long life span of a bovine animal but for other reasons as well, every past change in the trend of cattle numbers has started a new trend lasting several years; (3) dairy production has given way to some other livestock enterprises. This is particularly the case in the Mid-west, and milk cows there have provided fewer calves for raising as beef animals; (4) in cattle feeding, initial investment in the feeder animal is a large proportion of total expenses. Thus, the high cost of feeder cattle, due to their high value for meat, has tended to discourage prolonged feeding. Since it is the feeding rather than the breeding phase that has retrenched most, this factor has been important in the downturn in numbers. (5) High prices for slaughter cows have induced sharp culling of cow herds, which improved the quality of herds but has reduced numbers.

Cattle and calf slaughter in 1948 is expected to be nearly 33 million animals. This number is more than current net addition to herds (births plus imports minus deaths) and represents a net reduction in herd numbers. Indications are that numbers of cows as well as other classes of cattle will be reduced. As before, the drop in number of cows for milk appears to be relatively greater than that in beef cows.

Since fewer cattle will be on hand at the beginning of next year and fewer calves will be raised during the year because of reduced cow numbers, total cattle and calf slaughter in 1949 is expected to be smaller than in 1948. However, it may be reduced more than January 1 numbers would indicate. In 1948, possibly 2 million head of total slaughter came out of inventories. Big feed supplies and favorable feeding ratios in 1948-49 are likely to result in more grain-feeding of cattle. Moreover, the outlook for milk prices and production is more favorable for 1949 than for several years, and will retard or halt the decline in number of dairy stock.

However, very high prices for all slaughter animals, including cows, steers and heifers, and calves, will work against a complete reversal of the decline in cattle numbers and will tend to hold up 1949 slaughter. The most likely prospect, therefore, is that cattle and calf slaughter will be reduced substantially next year, but not enough to stop entirely the downtrend in herds. Since a rebuilding of herds must begin with retention of more calves, calf slaughter probably will be cut down more, as a percentage of 1948, than will cattle slaughter. A reduction in calf slaughter, though, does not affect meat supplies as much as a cut in cattle slaughter.

Due to short supplies and high prices for corn, fewer cattle were grain fed for market in 1948 than in 1947. The bumper corn crop this fall is likely to be followed by increased grain feeding. Shipments of stocker and feeder cattle to 8 Corn Belt States from May through August totaled 6 percent more than in the same months of 1947. But fewer stockers and feeders are available for feeding this year than in several recent years and high prices for slaughter are offering competition to feeder demand for animals suitable for either purpose. Also, investment in feeder animals will be larger than ever before, and the risk of loss on this investment will tend to limit the incentive from relatively cheap corn. The beef steer-corn price ratio at Chicago this fall promises to be the highest since 1932. But feeder steers at Kansas City in August, at an average price of $27.40 per 100 pounds, were 76.1 percent of the price of good beef slaughter steers at Chicago. This is a comparatively high current price ratio between feeder and stocker animals.

About 80,000 head of slaughter and feeder cattle (excluding calves) were imported from Canada through September 22. These imports have been permitted only since August 16 this year. Perhaps over 200,000 cattle of all kinds will be imported in 1949, of which more than half will be slaughter and feeder animals. Imports of Canadian cattle increase potential beef production of the United States only slightly. However, they amount to a partial replacement of the half-million head which were brought in from Mexico each year until the foot-and-mouth embargo stopped all shipments from that country.

Prospects are for more cattle on grain feed January 1, 1949 than the 3.8 million head a year earlier, but fewer than the 4.3 million of January 1,1947. More cattle may be fed during all months of 1949 than at the same time of 1948, unless progress of the 1949 corn crop is very unfavorable.

Increased grain feeding of cattle will increase the percentage of beef supplies that will be of the better grades. As usual, largest supplies of grain-fed beef will appear in spring and summer months.

Continuation of strong consumer demand will virtually ensure high prices for beef cattle and beef in 1949, although moderate reductions below the highest prices of 1948 are possible. Beef and beef cattle prices will be held up under those conditions by both the continued small meat supplies relative to demand and the reduced proportion of beef to all meat. Beef cattle prices will be affected by seasonal changes, and if a sharply larger spring pig crop should add greatly to the late 1949 meat supply, beef and beef cattle prices would join other meat and meat animal prices in more than a normal seasonal decline at the end of the year.

THE OUTLOOK FOR SHEEP AND LAMBS

Sheep Numbers Still Declining

In 7 years beginning 1942 sheep and lamb numbers declined 37 percent to the lowest point since 1871. That a further reduction has occurred during 1948 is indicated by the large numbers of ewes slaughtered. An estimated 15 percent or more of 1948 federally inspected sheep and lamb slaugter is classed as "sheep", most of which are ewes. This percentage is higher than that of 1947 (see table 8).

The 1948 lamb crop of 20.5 million was 8 percent smaller than the 1947 crop and the smallest on records that began in 1924. The Native Sheep States raised 6 percent fewer lambs, the Western States 9 percent fewer.

Lamb prices have changed from year to year since 1942 along with average prices of all meat animals. Wool prices, however, have risen more slowly, and have been a factor in the decline in sheep numbers. Sheep numbers were reduced as cattle were substituted for sheep on range--a substitution made possible by unusually favorable range conditions in many areas and encouraged by a scarcity of herders as well as by the comparatively slow rise in wool prices.

The abundant supplies and comparatively low prices of corn this fall will be favorable for grain feeding of lambs. The smaller lamb crop on the Western range, which provides most of the lambs for feeding, will nevertheless restrict the number that can be fed. As high or higher percentage of the lamb crop is expected to be on grain feed January 1, 1949 as a year earlier, but the number may not reach the 4.8 million on January 1 this year. If a near-record 23 percent of the lamb crop should be reported on feed, the number would still be less than in any year since 1928.

After remaining close to support levels for nearly two years, wool prices received by farmers improved substantially in the summer of 1948. Prices are expected to average higher than the support level of about 42 cents in 1949, chiefly because of premiums for the finer qualities of wool. In the last two years, demand has been stronger for the finer than for the coarser grades of wool. It had the effect of reducing CCC stocks of the finer grades. Now, however, CCC stocks of wool are nearly depleted and consist almost entirely of medium and coarse wools. Also, British Dominion Joint Organization wool stocks have been greatly reduced. Consequently, the finer qualities are expected to continue relatively scarce in 1949.

Shorn wool production of 237 million pounds in 1948 was the smallest in 25 years. Production is expected to drop still lower in 1949.

Table 8.- Sheep and lambs on farms and ranches January 1, number slaughtered during year and annual wool production, average 1937-41, annual 1942-48

Year	Number January 1			Slaughter		Farm production of shorn wool
	Stock sheep	On feed: Eleven Corn Belt States	On feed: All States	Total	Total	Sheep as percentage of total Fed. inspected slaughter of sheep and lambs	
	Thous.	Thous.	Thous.	Thous.	Thous.	Percent	Mil. lb.
Average 1937-41	45,879	3,223	5,979	51,857	21,874	6.7	367
1942	49,346	3,844	6,867	56,213	25,585	13.0	388
1943	48,196	4,309	6,954	55,150	27,073	21.0	379
1944	44,270	3,962	6,512	50,782	25,355	16.5	338
1945	39,609	4,354	6,911	46,520	24,639	20.9	308
1946	35,599	4,215	6,837	42,436	22,814	16.8	280
1947	32,125	3,693	5,693	37,818	18,766	13.8	253
1948 1/	30,544	2,740	4,788	35,332	17,227	15.0	237

1/ Preliminary estimates. Slaughter partly forecast.

HORSES AND MULES

The transition from work animals to mechanical sources of farm power goes on unabated. The number of horses and mules at the beginning of this year was scarcely more than one-third the 26.7 million in 1918. Further decline in numbers are expected next year, and the main question is how low numbers can go (see table 9).

Table 9.-Horses and mules: Number on farms, January 1, by age groups, United States, average 1937-41, annual 1942-48

Year	Horses			Mules			Horses and mules		
	Under 1 year	Over 1 year	Total	Under 1 year	Over 1 year	Total	Under 1 year	Over 1 year	Total
	Thous.	Thous.	Thous.	Thous.	Thous.	Thous.	Thous.	Thous.	Thous.
Average 1937-41	647	10,074	10,721	114	4,049	4,163	761	14,123	14,884
1942	503	9,370	9,873	130	3,652	3,782	633	13,022	13,655
1943	402	9,203	9,605	112	3,514	3,626	514	12,717	13,231
1944	364	8,828	9,192	98	3,323	3,421	462	12,151	12,613
1945	313	8,402	8,715	87	3,148	3,235	400	11,550	11,950
1946	240	7,813	8,053	65	2,945	3,010	305	10,758	11,063
1947	207	7,042	7,249	51	2,721	2,772	258	9,763	10,021
1948 1/	186	6,421	6,607	40	2,504	2,544	226	8,925	9,151

1/ Preliminary.

FEED SUPPLIES AND MEAT PRODUCTION

By Harold F. Breimyer

In a given year, feed supplies are an important factor in setting the limits to livestock production. The number of livestock raised and the quantity of livestock products produced cannot in a particular year exceed levels permitted by the feed resources, and over several years will be about equivalent to the average size of feed supplies. 1/

This general relationship is notably pertinent to the outlook for 1949. Following several years of annual feed supplies smaller than their temporary peak in 1942 and 1943, and an especially poor feed year in 1947 when the corn crop was small, supplies have improved materially this year. The 1948 corn crop will set a new record, as will total supplies of all feed grains. The supply of all feed concentrates will be short of that in the 1942-43 year, but will be the most ever in terms of the number of livestock on farms. How will this feed supply affect livestock production in 1949 and later?

1/ Also implicit in this relationship is the derived nature of demand for feed. This holds true over a considerable time. In the long run, consumer demand for livestock and livestock products influences the level of output of both livestock and feed crops.

The General Picture

In an analysis of feed supply and livestock production, these are the major relationships:

(1) Livestock production (animals raised or fed plus milk and eggs produced) is more closely related to feed supplies as an average over a few years than in a single year.

(2) Aggregate production (all animals and products combined) reflects feed supplies more closely than does production of any single class of livestock or livestock product. But when feed supplies change rapidly over several years, all kinds of livestock are somewhat affected.

(3) Following an increase or decrease in feed supply, production of meat, milk and eggs per animal responds earlier than does the number of animals.

(4) Over a period of a few months or a year, output of livestock products changes less than proportionately to the change in quantity of feed fed.

(5) Market supplies of meat are even slower to change than are the numbers of meat animals. Following larger feed supplies, there is a delay before the additional animals raised reach market; moreover, slaughter is reduced at first as animals are withheld from market for breeding or further feeding.

(6) In years of average supply the United States carry-over of feed grains usually does not fluctuate greatly. In a year of very large supply relative to the number of livestock, an extra quantity of feed is normally carried into the next year, and when feed is scarce some of the carry-over stocks are fed. Through this adjustment, quantities of feeds fed usually vary less from year to year than do quantities of supply, and the level of livestock production tends to even out.

Feed Concentrates and Total Livestock Production

The cover chart to this report illustrates the relationship between changes in feed concentrate supplies and livestock production during the past 10 years. For the five years through 1942, annual feed supplies increased steadily and livestock production also expanded. After 1942, feed supplies decreased and livestock production did likewise. (Data for the chart are taken from table 4.)

The chart shows, too, the source of the feed supplies at their 1942 peak. Production of feed grains was up, and contributed greatly. But other sources were exceptionally important at that time. Carry-overs of feed grains were large, having been accumulated especially through the Government corn loan program. Corn stored under seal was fed in 1942 and 1943. Moreover, unusually large quantities of wheat were fed in those years. Much of it was from Government storage, and its feeding was encouraged by subsidy. Imports of grains became important in 1942 and 1943. Finally, byproduct feeds increased in supply.

After 1942, annual feed grain crops did not decline greatly until the poor corn year of 1947, but a reduction in supply occurred because large stocks of corn and wheat had been used up and because imports also fell off. In 1947 a smaller feed grain production caused total feed concentrate supply to reach the lowest level since 1938. Quantities of feeds fed declined less than supply, livestock production followed the quantity fed, and livestock output in the 1947-48 feeding year was the smallest since 1940-41.

Relation between units of livestock production and quantity of feed concentrates fed, marketing years beginning October, 1926-47

With lines of relationship for individual periods

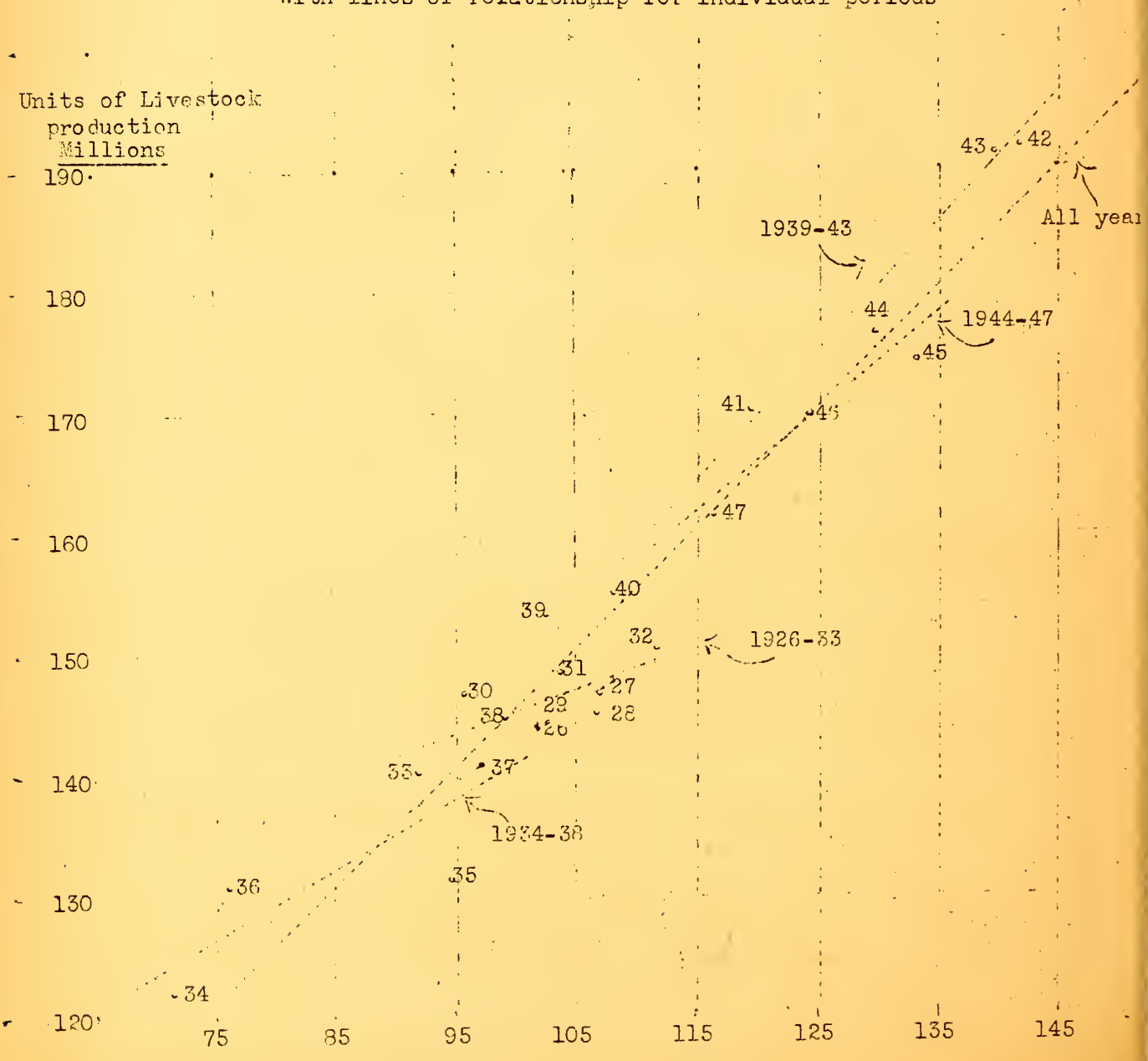

Table 10.-Units of livestock production and total concentrates fed, 1926-47

Feeding year beginning October	Total feed concentrates fed	Units of livestock production
	Million tons	Millions
1926	103.1	144.3
1927	107.3	146.6
1928	107.0	145.5
1929	104.6	145.7
1930	95.6	146.4
1931	104.2	148.1
1932	111.4	150.0
1933	92.1	140.5
1934	71.6	122.4
1935	94.7	130.3
1936	75.9	130.9
1937	97.0	141.5
1938	99.6	144.9
1939	102.9	153.4
1940	108.6	155.2
1941	119.0	170.0
1942	142.5	193.6
1943	139.0	191.3
1944	129.1	176.4
1945	133.5	174.6
1946	124.6	169.6
1947	115.7	162.5
1948	124.5	165.5

The relation between feed and livestock output over a longer period is shown in figure 1, which plots quantities of feed concentrates fed against units of livestock production. In years when large quantities of feed concentrates are fed, livestock production is also high. And when less feed is fed, production is down. This appears true both as a general tendency for the entire period, and, if individual years are examined, in the changes from one year to the next.

But rates of change from one year to another are different from those for a long-run period. When good weather causes an unusually good feed grain harvest and feed supplies are large for the livestock on hand, livestock producers can utilize their additional feed for immediate response in output only if they increase their rates of feeding. They will also begin to expand their herd numbers, as a rule, but so long a time is required to raise a mature animal that a larger output of meat, milk and eggs is not realized for a considerable time. Consequently, large feed crops are usually followed by higher rates of feeding for the livestock already on hand, as well as by some addition to herd numbers. However, output of milk, eggs and meat per animal does not increase in equal proportion to the extra feed. The result is that in year to year variations, output of livestock products does not change as fast as the quantities of feed concentrates fed.

This conclusion is illustrated in figure 1 by the separate lines of relationship for short periods, most of which are less steep than the overall relationship. In three recent periods, 1927-33, 1934-38, and 1944-47, livestock output responded only about one-half as fast as changes in feed concentrates fed. Output followed feed more closely only in 1939-43, when the entire livestock industry expanded rapidly along with climbing demand and prices and expanding feed supplies.

Feeds Fed and Output of Each Class of Livestock

Not all kinds of livestock are affected alike when feed supplies change. First, various species are not equally dependent on concentrate feeds. Hogs and poultry are certainly more completely fed on concentrates and are more responsive to changes in concentrate supplies than are beef cattle and sheep. Milk cows are intermediate in position. Secondly, a change in rate of feeding affects various classes of livestock differently. For example, milk production changes less with fluctuating rates of concentrate feeding than does hog production. And finally, the differences in length of life for chickens, hogs, sheep and cattle enter into the short-run effect of feed supplies and quantities fed.

From 1938 to 1943, all classes of livestock production expanded. Hogs and chickens (including commercial broilers) led with a very fast rate of climb and egg production was next (table 11). But cattle production, normally slow to change, in this case increased rapidly from its low post-drought level. Milk output is always more stable than other livestock production and it held closer to its 1938 figure. When livestock production receded from its high point in 1943, hogs again changed rapidly. Poultry and cattle were less sensitive. Milk production dropped off slowly. Fewer sheep and lambs were raised as sheep met sharper competition from cattle for range.

Feed Supply, Feeds Fed, and Carry-over

Quantities of feeds fed, the biggest part of all utilization of feeds, change generally with the size of supplies. In certain years, however, the feed grains added to or taken out of carry-over have been as large as 10 million tons, and have caused quantities fed to vary substantially from a normal relationship to supply.

Changes in carry-over from one year to the next are usually associated with two factors: The size of carry-over at the beginning of the year, and the size of total feed supply relative to livestock numbers. For example, a small initial carry-over is usually brought back to normal if the crop is of average size, and may be raised above average if the feed crops are especially large.

The net effect of these changes is to reduce the fluctuations caused by varying sizes of crops.

Table 11.- Farm production of various livestock products, with percentage changes, and ratios between meat-animal slaughter and production, 1938-48

Calendar year	Units of all products 1/	Milk produced	Eggs produced	Chicken meat produced 2/	Liveweight production on farms 3/			Liveweight of slaughter as a percentage of liveweight prod. on farms		
					Cattle and calves	Hogs	Sheep and lambs	Cattle and calves	Hogs	Sheep and lambs
	Million	Bil.lb.	Billion	Bil.lb.	Bil.lb.	Bil.lb.	Bil.lb.	Percent	Percent	Percent
1938	138.7	105.8	37.4	2.3	14.0	14.4	2.0	106	94	94
1939	150.4	106.?	38.8	2.6	15.2	17.1	2.0	98	90	92
1940	152.0	109.5	39.7	2.6	15.7	17.0	2.1	97	104	89
1941	159.0	115.3	41.9	2.9	17.0	17.5	2.3	99	96	87
1942	178.4	118.9	48.6	3.4	18.6	21.1	2.3	100	90	98
1943	199.2	117.8	54.5	4.3	19.2	25.4	2.1	96	92	116
1944	181.3	118.0	58.5	4.1	19.7	20.6	1.9	106	113	116
1945	177.9	121.5	55.9	4.4	19.3	19.1	1.9	117	94	121
1946	172.1	119.7	55.6	3.8	18.8	19.0	1.8	109	99	120
1947	168.1	119.4	55.3	3.6	19.1	18.7	1.6	120	99	110
1948 4/	161.9	116.5	53.5	3.4	18.0	18.1	1.4	112	97	114
Percentage change										
1938 to 43	+43.6	+11.3	+46.0	+88.3	+36.4	+76.6	+3.4			
1943 to 48	-18.7	- 1.1	- 1.9	-20.6	- 6.0	-28.7	-33.6			

1/ Units of livestock production, calendar year.
2/ Including commercial broilers.
3/ Liveweight added to animals on hand or raised on farms during year.
4/ Partly forecast.

Farm Production of Animals vs. Production of Dressed Meat from Slaughter

Data on milk and eggs produced on farms each year indicate almost exactly the quantities going into market channels. But when a certain quantity of feed fed to meat animals results in an equivalent addition of liveweight to the animals raised or fed during the year, it does not always yield a similar production of meat for consumption. Weight is added throughout the 6 to 9 months or more required for raising a butcher hog and the period as long as 2 years or more needed for producing a slaughter steer. The delay in response of market supplies of meat to changing feed supplies is roughly proportional to these life periods.

Because of these differences between liveweight of meat-animal production and liveweight of slaughter, meat output lagged behind the increase in meat-animal production during most of the period from 1938-43. Similarly, more meat has been produced and made available to consumers since 1943 than has been raised on farms and ranches.

Conclusions and Prospects for 1948-49

The increase in feed grain production from 1947 to 1948 was the biggest one-year jump ever recorded, except the recovery from the 1934 and 1936 drought. The normal response to this increase, and the present outlook for 1948-49, is a rise in output of livestock products. But the timing and degree of recovery in farm production and in market supplies of livestock products will be govern by the normal relationships between feed supplies and livestock production. Carry-over stocks of feed grains at the beginning of the year were extremely small. More will be held at the end of the year, including private stocks and those likely to remain under Government loan. Thus, the increase over 1947-48 in feeds fed this coming year will be smaller than the increase in supplies. Livestock numbers on farms are inadequate for the 1948 feed crops; therefore, feeding rates per animal will be high. This will result in increased production per animal, but the addition to total output will not equal fully the extra feeding. The increase in output will not be the same for all classes of livestock, and hogs may again outgain other kinds of livestock. Moreover, any increase in farm production of meat animals will add to meat supplies only after a delay--and that delay will be especially long in beef if cattle production begins to expand. More milk and chicken meat, however, will become available to consumers comparatively quickly.

These are the general conclusions, and the prospects for 1948-49. An illustrative example of how these conclusions may apply in actual quantities of production is shown in table 12. If farmers should push their livestock enterprise hard enough that feed grain supplies would be fed down to 550 million bushels of corn and 21.6 million tons of all feed grains at the end of the year, approximately 166 million units of livestock production might be expected. This production, derived from an 8 percent increase in feeds fed, would be 2½ percent larger than the 162 million units produced in 1947-48. Biggest increases among various kinds of livestock are likely in hogs and chickens, although the number of cattle on feed would rise considerably also.

In all, a 39 percent increase in feed grain crops would eventually result in only a 2½ percent gain in units of livestock production. The part of this gain coming from meat animals would reach consumers slowly. But in a longer view, if large harvests continue for one or more years a notable increase in units of production and in livestock products for consumption would be achieved.

Table 12.- Illustrative example of how livestock production could respond to increased feed supplies in the feeding year beginning October 1, 1948, with comparisons for 1947

Item	Unit	Feeding year beginning October		
		1947 1/	1948 2/	Percent change 1947-48
Feed Concentrates				
Feed grain production	Million tons	96.1	134.0	+ 39.4
Feed grain stocks, beginning of year	Ditto	13.7	8.0	- 41.6
Other supply (wheat, rye, byproducts)	Ditto	25.6	23.5	- 8.2
Total supply	Ditto	135.4	165.5	+ 22.2
Feed grain stocks, end of year	Ditto	8.0	21.6	+270.0
Concentrates fed	Ditto	115.7	124.5	+ 7.6
Estimated units of livestock production	Millions	162	166	+ 2.5
Possible breakdown of production according to major products				
Milk	Billion lb.	3/ 117.0	4/ 119.0	+ 1.7
Eggs	Billion eggs	3/ 53.5	4/ 53.5	0.0
Cattle on feed, Jan. 1	Millions	3.8	4.0	+ 5.3
Hogs 5/	Billion lb.	3/ 18.1	4/ 20.5	+ 13.3
Sheep and lambs on feed, January 1	Millions	4.8	4.6	- 4.2

1/ Data partly forecast.
2/ Illustrative, but reasonably consistent with outlook for individual commodities.
3/ Calendar year 1948.
4/ Calendar year 1949.
5/ Live weight of production on farms.

Supplementary Note on Terms and Data

Feed and livestock analysis is aided by certain terms and data that have been developed for the purpose. The feed supply is made up of many different kinds of feeds. The broadest distinction is between concentrates and roughages. Concentrates include the following: The four feed grains--corn (including ear forms of use) oats, barley and grain sorghums; other grains fed, which are mainly wheat and rye; and many byproduct feeds including grain byproducts, oilseed meals, distillers' grains, tankage and other packing house feeds, and several others. Roughage of course includes both pasture and hay as well as such feeds as corn fodder and stover, oat straw, hulls, and others.

The various concentrate feeds can be considered together because they are similar enough to permit substantial interchangeability and substitution in feeding. Their total supply is more important than is the composition of the supply or the relative scarcity or abundance of a single feed. Most feed-and-livestock analyses deal with concentrates only, in part because complete data are lacking on the total supply as well as quality of roughage from hay, range, pasture and the many minor roughage crops. However, concentrates as a whole are frequently more important in governing the output of livestock products than are roughages, since farmers adjust and manage their rates of feeding concentrates more sharply than they do their rates of feeding the various roughages.

Supply of concentrates is distinguished from concentrates fed. Supply is the quantity available for all purposes throughout the feeding year of October to September, whereas concentrates fed pertains to the quantities estimated as actually fed to livestock. For feed grains, an entire year's supply becomes available during the few months of harvest, since it consists of the quantity produced together with the carry-over of old grain. For wheat and rye the supply is considered to be the quantity likely to be fed, since the grain that goes to mills and other non-feed uses ordinarily has never entered the feed supply. Supply of byproduct feeds is the same as their production for feed, because they become available continuously throughout the feeding year. Data on supply of concentrates for 1948-49, as an example, are an estimate of production and stocks of feed grains combined with a somewhat less accurate estimate of wheat, rye and byproduct feeds that will be fed during the ensuing 12 months.

Total supply is distributed into food and industrial use, exports, seed use, feed for livestock, and carry-over at the end of the year. The quantity that will be fed can be estimated less accurately at the beginning of the year than can the supply, particularly because of the difficulty of forecasting how much of the supply will remain as carry-over a year later. It is necessary to examine and recalculate periodically during the year the quantity of feed concentrates likely to be fed.

Several series have been developed showing livestock numbers and production. Since the feed situation affects total livestock production more than production of any single product, a measure is needed for quantities of all livestock products combined. In series now available, the numbers of various animals or quantities of their products are added together by means of factors that represent the average requirements of feed for their production. When only feed concentrates rather than roughages are being considered, the weighting is done according to requirements for concentrates alone. Three series are particularly useful. The first, which has long been published, is the grain-consuming animal units on January 1 of each year. This combines the January numbers of each species of livestock into a single figure. It represents the size of the national livestock herd at a time near the beginning of the feeding year, and has a statistical advantage in that preliminary estimates can be had fairly early in the year, but is not

Livestock prices per 100 pounds (except where noted) marketings and slaughter statistics, by species, August 1948 with comparisons

PRICES

Item	Annual Av. 1937-46	January - August 1947	January - August 1948	1947 July	1947 August	1948 July	1948 August
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Cattle and calves							
Beef steers sold out of first hands, Chicago:							
Choice and prime	14.61	27.82	34.32	30.25	31.91	38.72	39.48
Good	13.29	25.13	31.35	27.64	28.27	36.44	36.02
Medium	11.63	22.00	27.38	24.30	21.96	30.83	29.15
Common	9.67	17.74	22.82	19.49	16.89	22.84	22.89
All grades	13.22	24.62	31.05	27.85	25.84	36.37	35.22
Good grade cows, Chicago	10.30	17.85	23.96	19.04	18.87	25.78	24.56
Vealers: Gd. and Ch., Chicago	12.90	24.28	28.18	23.07	23.08	28.92	29.60
Stocker and feeder steers Kansas City	10.66	20.28	26.61	21.91	21.22	28.25	27.40
Av. price received by farmers:							
Beef cattle	9.71	18.32	22.79	19.50	19.00	25.80	24.40
Veal calves	10.99	19.85	24.94	20.80	20.70	26.70	26.60
Hogs							
Av. market prices, Chicago:							
Barrows and gilts	---	24.65	24.08	24.74	26.31	27.97	29.56
Sows	---	20.51	20.30	19.67	22.13	22.93	25.36
All purchases	11.45	23.61	23.18	22.11	23.74	25.17	26.89
Av. price received by farmers:							
Hogs	10.92	23.31	23.28	22.00	23.60	25.90	27.10
Corn, cents per bushel	86.1	165.1	211.6	201.0	219.0	202.0	191.0
Hog-corn price ratio, U. S. 1/	13.1	15.0	11.1	11.7	11.1	12.8	14.2
Sheep and lambs							
Lambs, Gd. and Ch., Chicago	12.72	23.44	26.42	24.46	23.88	30.07	27.51
Feeding lambs, Gd. and Ch., Omaha	11.21	2/20.34	3/21.99	---	21.31	---	25.97
Ewes, Gd. and Ch., Chicago	5.90	9.09	12.21	8.22	9.05	11.64	12.08
Av. price received by farmers:							
Sheep	5.33	8.33	9.82	8.59	8.55	10.20	10.20
Lambs	10.72	20.18	22.92	20.90	20.90	26.20	24.80
Meat							
Wholesale, Chicago:							
Steer beef, carcass (good, 500-600 lbs.)	18.86	39.06	49.89	43.46	46.40	57.83	57.78
Hog products 4/	19.17	39.96	42.05	40.04	42.86	44.10	46.37
Lamb carcasses (good, 30-40 lbs.)	21.18	5/42.09	49.96	46.04	45.55	56.80	51.75
B.L.S. index retail meat prices 6/	118.7	209.4	---	220.2	228.4	261.8	---
Index income of industrial workers 1935-39=100	206.8	321.8	---	321.9	333.3	360.9	---

Livestock Marketing and Slaughter Statistics

	Unit						
Meat-animal marketings: Index numbers (1935-39=100)	--	129	142	130	146	130	115	121
Stocker and Feeder shipments to 8 Corn Belt States								
Cattle and calves	Thous.	---	1,119	907	157	198	138	221
Sheep and lambs	Thous.	---	1,349	825	166	283	61	229
Slaughter under Federal Inspection								
Numbers: 7/								
Cattle	Thous.	11,398	9,938	8,291	1,274	1,217	1,046	1,086
Calves	Thous.	5,946	4,966	4,489	656	628	577	569
Sheep and lambs	Thous.	19,602	10,589	9,474	1,280	1,253	1,195	1,264
Hogs	Thous.	47,781	30,434	29,167	3,455	2,731	3,044	2,440
Average live-weight:								
Cattle	Pounds	939	934	8/945	922	905	925	8/926
Calves	Pounds	200	194	8/194	222	234	225	8/243
Sheep and lambs	Pounds	89	95	8/ 95	88	90	90	8/ 91
Hogs	Pounds	243	263	8/260	288	284	281	8/270
Meat Production:								
Beef	Mil.lb.	5,689	4,948	8/4,156	622	571	505	8/538
Veal	Mil.lb.	664	532	8/487	81	80	72	8/ 79
Lamb and mutton	Mil.lb.	804	464	8/416	53	52	50	8/ 54
Pork (excluding lard)	Mil.lb.	6,700	4,495	8/4,269	551	438	478	8/369
Storage stocks end of month:								
Beef	Mil.lb.	---	---	---	94	97	71	69
Pork	Mil.lb.	---	---	---	332	264	508	365
Lamb and mutton	Mil.lb.	---	---	---	8	8	9	10
Total meat and meat products	Mil.lb.	---	---	---	549	473	686	536
Percent packing sows are of federally inspected hog slaughter	Percent	---	15	---	33	36	32	---

1/ Number of bushels of corn equivalent in value to 100 pounds of live hogs. 2/ Average of prices for January, February, March, April and August. 3/ Average of prices for January, February, March, April, May and August. 4/ Calculated from value of 71.32 pounds of fresh and cured-hog products including lard. 5/ Average of prices for January, February, March, April, July and August. 6/ Meat, poultry and fish: Bureau of Labor Statistics, 1935-39=100. 7/ 1947 and 1948 slaughter excludes Hawaii and Virgin Islands. 8/ Estimates based on weekly quotations.

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an accurate indicator of year-long feed requirements. A second series, animal units fed annually, represents the average number of livestock fed throughout the feeding year, again combined into a single composite figure by feed-requirement weights. (Published as Animal Units of Livestock Fed Annually, 1919-20 to 1946-47, BAE, Nov. 1947). The third series measures not the number of head of livestock on hand or fed, but the quantity of livestock products produced. Essentially it reflects the quantity of milk, chickens, turkeys, beef and veal, pork, and lamb and mutton produced on farms, as added together according to feed concentrate-requirement factors. Horses and mules are necessarily included, through factors applied to their numbers. (Published as Units of Livestock Production, BAE, April 1948). The first two series, animal units on farms, January 1, and animal units fed annually, are comparable in meaning to the supply of feed concentrates. By their use, total livestock on hand or fed can be matched against the feed supplies available. Units of livestock production are more nearly comparable to feed concentrates fed; they compare production actually achieved over a one-year period with quantities of feed actually fed during the same period.